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(54) **SMART GARMENT AND METHOD FOR DETECTION OF BODY KINEMATICS AND PHYSICAL STATE**

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(57) **ABSTRACT**

A body garment including sensors distributed throughout the garment, each sensor senses body state information from a local surface area of a body; and sensor nodes in proximity to the plurality of sensors, each sensor node including a processor to receive sensing body state information from at least one of the plurality of sensors. Each processor is configured to receive body state information locally from sensors, to utilize the information to determine a local surface shape of the surface of a portion of the body part; and to exchange local surface shape information with neighboring sensor nodes. At least one processor of utilizes the local surface shape information received from the sensor nodes to generate one overall model of a surface shape of the entire surface of the body part covered by the garment.